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L4: Entry 1 of 21

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Feb 6, 2001

US-PAT-NO: 6184440

DOCUMENT-IDENTIFIER: US 6184440 B1

TITLE: Transgenic plants of altered morphology

DATE-ISSUED: February 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Shpigel; Etai	Kibbutz Megido			IL

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Yissum Research Development Company of the Hebrew University of Jerusalem				IL		03

APPL-NO: 09/ 006632 [PALM]

DATE FILED: January 13, 1998

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PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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ISSUE-DATE

PATENTEE-NAME

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☐ 5137819

August 1992

Kilburn et al.

435/179

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<input type="checkbox"/> <u>5258502</u>	November 1993	Kuranda	530/350
<input type="checkbox"/> <u>5496934</u>	March 1996	Shoseyov et al.	536/23.7
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<input type="checkbox"/> <u>5705375</u>	January 1998	Van Ooyen et al.	435/468

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
WO 94/24158	October 1994	WO	
WO 97/28256	August 1997	WO	

OTHER PUBLICATIONS

Jespers et al, Bio/technology, vol. 13, pp. 378-382, 1995.

Shani, Z. et al., "Cloning and characterization of elongation specific endo-1,4-.beta.-glucanase (cell) from Arabidopsis thaliana", Plant Molecular Biology, vol. 34:837-842 (1997).

Nakamura, S. et al., "Cloning and Sequencing of a cDNA for Poplar Endo-1,4-.beta.-Glucanase", Plant Cell Physiol., vol. 36(7):1229-1235 (1995).

Ohmiya, K. et al., "Structure of a Ruminococcus albus Endo-1,4-.beta.-Glucanase Gene", Journal of Bacteriology, vol. 171(12):6771-6775 (Dec. 1989).

Kim et al., "A 20 nucleotide upstream element is essential for the nopaline synthase synthase (nos) promoter activity", Plant Molecular Biology, vol. 24:105-117 (1994).

Odell, J.T. et al., "Identification of DNA sequences required for activity of the cauliflower mosaic virus 35S promoter", Nature, vol. 313:810-812.

Yu and Smith, "Affinity Maturation of Phage-Displayed Peptide Ligands," Methods Enzymol., 267:3-27 (1996).

Shcherban, T.Y. et al., "Molecular cloning and sequence analysis of expansins--a highly conserved, multigene family of proteins that mediate cell wall extension in plants", Proc. Natl. Acad. Sci. USA, vol. 92:9245-9249 (Sep. 1995).

Rogers, S.G. et al., "Gene Transfer in Plants: Production of Transformed Plants Using Ti Plasmid Vectors", Methods in Enzymology, vol. 118:627-641 (1986).

Clackson and Wells, "In Vitro Selection from Protein and Peptide Libraries," Trends Biotech., vol. 12:173-184 (May 1994).

Herbers et al., "A Thermostable Xylanase from Clostridium thermocellum Expressed at High Levels in the Apoplast of Transgenic Tobacco Has No Detrimental Effects and Is Easily Purified," Bio/Technology, vol. 13:63-66 (Jan. 1995).

Piruzian et al., "The use of a thermostable .beta.-glucanase gene from Clostridium thermocellum as a reporter gene in plants," Mol Gen. Genet. vol. 257:561-567 (1988). (1988).

Laliberte et al., "The xylanase introns from Cryptococcus-albidus are accurately spliced in transgenic tobacco plants," Plant Molecular Biology vol. 18:447-451 (1992).

Gilkes N.R. et al., "Domains in Microbiol. .beta.-1, 4 Glycanases: Sequence Conservatory Function, and Enzyme Families", Micro Biological Reviews, vol. 55, No.2:303-315 (Jun. 1991).

Hatfield R.D., Nevins, D.J., "Hydrolytic Activity and Substrate Specificity of an Endoglucanase from Zea mays Seedling Cell Walls", Plant Physiol., vol. 83:203-207 (1987).

Hayashi T. et al., "Pea Xyloglucan and Cellulose. II. Hydrolysis by Pea Endo-1, 4-

.beta.-Glucanases", *Plant Physiol.* vol. 75:605-610 (Mar. 1984).

Wu, S. et al., "Characterization of an Endo-.beta.-1, 4-Glucanase Gene Induced by Auxin in Elongating Pea Epicotyls" *Plant Physiol.*, vol. 110:163-170 (Jan. 1996).

Fry, S.C., "The Growing Plant Cell Wall: Chemical and Metabolic Analysis", monograph published by Longman Scientific & Technical, Chapter 11:279-285 (1988).

Hughes J., McCully, M. "The Use of an Optical Brightener in the Study of Plant Structure", *Stain Technology*, vol. 50, No. 5:319-329 (1975).

Goldstein, M. A. et al., "Characterization of the Cellulose-Binding Domain of the *Clostridium Cellulovorans* Cellulose-Binding Protein A", *Journal of Bacteriology*, vol. 175, No. 18:5762-5768 (Sep. 1993).

Morag E., et al., "Expression, Purification, and Characterization of the Cellulose-Binding Domain of the Scaffoldin Subunit from the Cellulosome of *Clostridium thermocellum*", *Applied and Environmental Microbiology*, vol. 61, No. 5:1980-1986 (May 1995).

Fry S., "Wall Tightening and Loosening: growth", in "The Growing Plant Cell Wall: Chemical and Metabolic Analysis", Longman Scientific & Technical, Chapter 10:269-278 (1988).

Fry S., "Biologically-active wall oligosaccharides", in *The Growing Plant Cell Wall: Wall: Chemical and Metabolic Analysis*, Longman Scientific & Technical, Chapter 9:257-268 (1988).

Haigler C.H. et al., "Calcofluor White St Alters the in vivo Assembly of Cellulose Microfibrils", *Science*, vol. 210:903-906 (Nov. 1980).

Cresti M., Tiezzi, A., "Pollen Tube Emission, Organization and Tip Growth" in *Sexual Sexual Plant Reproduction*, Springer-Verlag, Berlin (1992), Cresti and Tiezzi editions:89-98.

McQueen-Mason S. et al., "Two Endogenous Proteins that Induce Cell Wall Extension in Plants", *The Plant Cell*, vol. 4:1425-1433 (Nov. 1992).

Hayashi T. et al., "Characterization of the Adsorption of Xyloglucan to Cellulose", *Plant & Cell Physiol.*, vol. 35 No. 8:1199-1205 (1994).

Steer W., Steer M., "Tansley Review No. 16 Pollen Tube Tip Growth", *New Phytol.*, vol. III, No. 3:323-358 (Mar. 1989).

McDougall G.J., Fry S.C., "Xyloglucan Oligosaccharides Promote Growth and Activate Cellulase: Evidence for a Role of Cellulase in Cell Expansion", *Plant Physiol.*, vol. 93:1042-1048 (1990).

McQueen-Mason S.J., Cosgrove D.J., "Expansin Mode of Action on Cell Walls". *Plant Physiol.*, vol. 107:87-100 (Jan. 1995).

York W.S., et al., "Inhibition of 2,4-Dichlorophenoxyacetic Acid-Stimulated Elongation of Pea Stem Segments by a Xyloglucan Oligosaccharide", *Plant Physiol.*, vol. 75:295-297 (Jun. 1984).

Inouhe M., Nevins D.J., "Inhibition of Auxin-Induced Cell Elongation of Maize Coleoptiles by Antibodies Specific for Cell Wall Glucanases", *Plant Physiol.*, vol. 96:426-431 (Feb. 1991).

Hoson T., Nevins D.J., ".beta.-D-Glucan Antibodies Inhibit Auxin-Induced Cell Elongation and Changes in the Cell Wall of Zea Coleoptile Segments", *Plant Physiol.*, vol. 90:1353-1358 (Feb. 1989).

McDougall G. J., Fry S.C., "Inhibition of Auxin-stimulated Growth of Pea Stem Segments by a Specific Nonasaccharide of Xyloglucan", *Planta*, vol. 175, No.3:412-416 416 (1988).

McQueen-Mason et al., "The relationship between xyloglucan endotransglycosylase and in vitro cell wall extension in cucumber hypocotyls", *Planta*, vol. 190:327-331 (1993).

Hayashi T., et al., "Pea Xyloglucan and Cellulose. V. Xyloglucan-cellulose Interactions In Vitro and In Vivo", *Plant Physiol.*, vol. 83, No. 2:384-389 (Feb. 1987).

Aldington S., Fry S.C., "Oligosaccharins" *Advances in Botanical Research*, vol. 19:2-19:2-77 (1993).

Cabib, Enrico, "Chitinase from *Serratia marcescens*", *Methods in Enzymology* 161:460-462 (1988).

Greenwood et al., "Fusion to an endoglucanase allows alkaline phosphatase to bind to to cellulose," *EBS Letters* 244(1):127-131 (1989).

- Shoseyov et al., "Essential 170-kDa subunit for degradation of crystalline cellulose cellulose by *Clostridium cellulovorans* cellulase," *Proc. Natl. Acad. Sci. USA* 87:2192-2195 (1990).
- Shoseyov et al., "Immobilized Endo-.beta.-glucosidase Enriches Flavor of Wine and Passion Fruit Juice," *JAFUCU* 38(6):1387-1390 (1990).
- Klyosov, Anatole A., "Trends in Biochemistry and Enzymology of Cellulose Degradation," *Biochemistry* 29(47):10577-10585 (1990).
- Shoseyov et al., "Primary sequence analysis of *Clostridium cellulovorans* cellulose binding protein A," *Proc. Natl. Acad. Sci. USA* 89:3483-3487 (1992).
- Din et al., "Non-Hydrolytic Disruption of Cellulose Fibres by the Binding Domain of a Bacterial Cellulase," *Bio/Technology* 9:1096-1099 (1991).
- Gerngross, et al., 1993, "Sequencing of a *Clostridium thermocellum* gene (cipA) encoding the cellulosomal S.sub.L -protein reveals an unusual degree of internal homology," *Molecular Biology*, vol. 8, No. 2, pp. 325-334.
- Hazlewood, et al., 1993, Gene sequence and properties of Cell, a family E endoglucanase from *Clostridium thermocellum*, *Journal of General Microbiology*, vol. 139: pp. 307-316.
- Hansen, et al., 1992, "celA from *Bacillus lautus* PL236 Encodes a Novel Cellulose-Binding Endo-.beta.-1,4-Glucanase," *Journal of Bacteriology*, vol. 174, No. 11, pp. 3522-3531.
- Saul, et al., 1989, "Nucleotide sequence of a gene from *Caldocellum saccharolyticum* encoding for exocellulase and endocellulase activity," *Nucleic Acids Research*, vol. 17, No. 1, pp. 439.
- MacKay, et al., 1986, "Structure of a *Bacillus subtilis* endo-.beta.-1,4-glucanase gene," *Nucleic Acids Research*, vol. 14, No. 22, pp. 9159-9170.
- Jauris, et al., 1990, "Sequence analysis of the *clostridium stercorarium* celZ gene encoding a thermoactive cellulase (Avicelase I): Identification of catalytic and cellulose-binding domains," *Mol. Gen. Genet.*, vol. 223: pp. 258-267.
- Poole, et al., 1992, Identification of the cellulose-binding domain of the cellulosome subunit S1 from *Clostridium thermocellum* YS, *FEMS Microbiology Letters*, vol. 99: pp. 181-186.
- Foong et al., 1991, "Nucleotide sequence and characteristics of endoglucanase gene engB from *Clostridium cellulovorans*," *Journal of General Microbiology* vol. 137:1729-137:1729-1736.
- Shoseyov et al., 1991, "Nucleotide Sequence of *Clostridium cellulovorans* gene homologous to cyclic-AMP dependent kinase," *Nucleic Acids Res.* vol. 19:1710.
- Shoseyov et al., 1990, "Cloning of 170 dKa *Clostridium cellulovorans* Cellulase Subunit: An Essential Protein for the Degradation of Crystalline Cellulose," *Abstracts of the Annual Meeting of the American Society for Microbiology* 0-24, p. 267.
- Shoseyov et al., 1990, "Cloning of *Clostridium Cellulovorans* Endo-1, 4-.beta.-Glucanase Genes," *Biochemical Biophysical Research Communications* vol. 169(2):662-672.
- Bowie et al., 1990, "Deciphering the Message in Protein Sequences Tolerance to Amino Acid Substitutions," *Science* vol. 247:1306-1310.
- Sambrook et al., "Detection and Analysis of Proteins Expressed from Cloned Genes," *Molecular Cloning, A Laboratory Manual*, 2nd ed., pp. 18.2-18.75.
- Greenwood et al., 1992, "Cellulose-binding domains: potential for purification of complex proteins," *Protein Engineering* vol. 5:361-365.
- Ong et al., 1993, "The Cellulose-Binding Domain (CBD.sub.Cex) of an Exoglucanase from *Cellulomonas fimi*: Production in *Escherichia coli* and Characterization of the Polypeptide," *Biotechnology and Bioengineering* vol. 42:401-409.
- Durrant et al., 1991, "The non-catalytic C-terminal region of endoglucanase E from *Clostridium thermocellum* contains a cellulose-binding domain," *Biochem. J.* vol. 273:289-293.
- Ong et al., 1989, "The cellulose-binding domains of cellulases: tools for biotechnology," *TibTech* vol. 7:239-243.
- Poole et al., 1991, "Characterization of hybrid proteins consisting of the catalytic domains of *Clostridium* and *Ruminococcus* endoglucanases, fused to *Pseudomonas* non-catalytic cellulose-binding domains," *Biochem. J.* vol. 279:787-792.

- Greenwood et al., 1989, "Fusion to an endoglucanase allows alkaline phosphatase to bind to cellulose," *FEBS Letters* vol. 244(1):127-131.
- Carpita et al., 1993, "Structural models of primary cell walls in flowering plants: consistency of molecular structure with the physical properties of the walls during growth", *Plant J.* vol. 3:1-30.
- Cosgrove, 1993, "How Do Plant Cell Walls Extend?", *Plant Physiol.* vol. 102:1-6.
- Nishitani et al., 1992, "Endo-xyloglucan Transferase, a Novel Class of Glycosyltransferase That Catalyzes Transfer of a Segment of Xyloglucan Molecule to Another Xyloglucan Molecule", *J. Biol. Chem.* vol. 267:21058-21064.
- Fry et al., 1992, "Xyloglucan endotransglycosylase, a new wall-loosening enzyme activity from plants", *Biochem. J.* vol. 282:821-828.
- McQueen-Mason et al., 1995, "Expansin Mode of Action on Cell Walls: Analysis of Wall Wall Hydrolysis, Stress Relaxation, and Binding", *Plant Physiol.* vol. 107:87-100.
- Shoseyov et al., 1992, "The Role of Endo-1,4-Beta-Glucanase in Plant Cell Elongation. In-Vitro Studies of Peach Pollen", *Acta. Hort.* vol. 329:225-227.
- Verma et al., 1975, "Regulation and in Vitro Translation of Messenger Ribonucleic Acid for Cellulase from Auxin-treated Pea Epicotyls", *J. Biol. Chem.* vol. 250:1019-1026.
- Hayashi, 1989, "Xyloglucans in the Primary Cell Wall", *Ann. Rev. Plant Physiol.* vol. 40:139-168.
- Darvill et al., 1992, "Oligosaccharins-oligosaccharides that regulate growth, development and defence responses in plants", *Glycobiology* vol. 2:181-198.
- Cass et al., 1990, "Isolation and characterization of a cellulase gene family member member expressed during avocado fruit ripening", *Mol. Gen. Genet.* vol. 223:76-86.
- Fischer and Bennett, 1991, "Role of Cell Wall Hydrolases in Fruit Ripening", *Ann. Rev. Plant Physiol. Plant Mol. Biol.* vol. 42:675-703.
- Lashbrook et al., 1994, "Two Divergent Endo-.beta.-1,4-glucanase Genes Exhibit Overlapping Expression in Ripening Fruit and Abscising Flowers", *Plant Cell* vol. 6:1485-1493.
- Tucker et al., 1987, "Avocado cellulase: nucleotide sequence of a putative full-length cDNA clone and evidence for a small gene family", *Plant Mol. Biol.* vol. 9:197-203.
- Kemmerer et al., 1994, "Comparative Study of Cellulases Associated with Adventitious Adventitious Root Initiation, Apical Buds, and Leaf, Flower, and Pod Abscission Zones in Soybean", *Plant Physiol.* vol. 104:557-562.
- Tucker et al., 1991, "Sequence Analysis and Comparison of Avocado Fruit and Bean Abscission Cellulases", *Plant Physiol.* vol. 95:928-933.
- Bevan, 1984, "Binary Agrobacterium vectors for plant transformation", *Nuc. Acid Res. Res.* vol. 12:8711-8721.
- Rogers et al., 1986, "Gene Transfer in Plants: Production of Transformed Plants Using Ti Plasmid Vectors", *Methods Enzymol.* vol. 118:627-641.
- Hernalsteens et al., 1984, "An Agrobacterium-transformed cell culture from the monocot *Asparagus officinalis*", *EMBO J* vol. 3:3039-3041.
- Hooykass-Van Slogteren et al., 1984, "Expression of Ti plasmid genes in monocotyledonous plants infected with *Agrobacterium tumefaciens*", *Nature* vol. 311:763-764.
- Grimsley et al., 1987, "Agrobacterium-mediated delivery of infectious maize streak virus into maize plants", *Nature* vol. 325:177-179.
- Boulton et al., 1989, "Specificity of Agrobacterium-mediated delivery of maize streak virus DNA to members of the Gramineae", *Plant Mol. Biol.* vol. 12:31-40.
- Gould et al., 1991, "Transformation of *Zea mays* L. Using *Agrobacterium tumefaciens* and the Shoot Apex", *Plant Physiol.* vol. 95:426-434.
- Paszkowski et al., 1984, "Direct gene transfer to plants", *EMBO J* vol. 3:2717-2722.
- Potrykus et al., 1985, "Molecular and general genetics of a hybrid foreign gene introduced into tobacco by direct gene transfer", *Molec. Gen. Genet.* vol. 199:169-177.
- Fromm et al., 1985, "Expression of genes transferred into monocot and dicot plant cells by electroporation", *Proc. Nat. Acad. Sci. USA* vol. 82:5824-5828.

Shimamoto, 1989, "Fertile transgenic rice plants regenerated from transformed protoplasts", *Nature* vol. 338:274-276.

D'Halluin et al., 1992, "Transgenic Maize Plants by Tissue Electroporation", *Plant Cell* vol. 4:1495-1505.

Kaeppeler et al., 1990, "Silicon carbide fiber-mediated DNA delivery into plant cells", *Plant Cell Reporter* vol. 9:415-418.

Klein et al., 1988, "Transfer of foreign genes into intact maize cells with high-velocity microprojectiles", *Proc. Nat. Acad. Sci. USA* vol. 85:4305-4309.

Gordon-Kamm et al., "Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants", 1990, *Plant Cell* vol. 2:603-618.

Tzfira et al., 1997, "Transformation and regeneration of transgenic aspen plants via shoot formation from stem explants", *Physiologia Plantarum* vol. 99:554-561.

Ross et al., 1991, "Cellulose Biosynthesis and Function in Bacteria", *Microbiological Reviews* vol. 55:35-58.

Benziman et al., 1980, "Cellulose biogenesis: Polymerization and crystallization are coupled processes in *Acetobacter xylinum*", *Proc. Natl. Acad. Sci. USA* vol. 77:6678-6682.

Haigler, 1991, "Relationship between polymerization and crystallization in microfibril biogenesis," in: *Biosynthesis and Biodegradation of Cellulose*, pp. 99-124, eds C.H. Haigler and P.J. Weimer, Marcel Dekker, Inc., New York.

Waaland and Waaland, 1975, "Analysis of Cell Elongation in Red Algae by Fluorescent Labelling", *Planta* vol. 126:127-138.

Jefferson et al., 1975, "GUS fusions: .beta.-glucuronidase as a sensitive and versatile gene fusion marker in higher plants", *EMBO J.* vol. 6:3901-3907.

Brown et al., 1982, "Experimental Induction of Altered Nonmicrofibrillar Cellulose", *Cellulose*, *Science* vol. 218:1141-1142.

Haigler et al., 1988, "Electron Diffraction Analysis of the Altered Cellulose Synthesized by *Acetobacter xylinum* in the Presence of Fluorescent Brightening Agents Agents and Direct Dyes", *J. Ultrastruct. Mol. Struct. Res.* vol. 98:299-311.

Horsch et al., 1985, "A Simple and General Method for Transferring Genes into Plants", *Science* vol. 227:1229-1231.

Tucker et al., 1988, "Bean Abscission Cellulase: Characterization of a cDNA Clone and Regulation of Gene Expression by Ethylene and Auxin", *Plant Physiol.* vol. 88:1257-1262.

Haigler et al., 1980, "Calcofluor White ST Alters the in vivo Assembly of Cellulose Microfibrils", *Science* vol. 210:903-905.

Bevan et al., 1982, "T-DNA of the *Agrobacterium* TI and RI Plasmids", *Ann. Rev. Genet.* vol. 16:357-384.

Larson et al., 1996, "A cellulose-binding protein from *Ruminococcus albus* possesses an amino-terminal motif characteristic of Type 4 fimbrial proteins", *Microbial & Comparative Genomics* vol. 1:380.

Shoseyov, 1992, "Endo-(1,4)-.beta.-Glucanase Gene Expression During Adventitious Root Formation In Mung Bean Cuttings", Thesis Submitted to the Faculty of Agriculture of the Hebrew University of Jerusalem for the Degree "Master of Science".

Tomme et al., 1995, "Cellulose-Binding Domains: Classification and Properties", *ACS Symposium Series 618/Enzymatic Degradation of Insoluble Carbohydrates*, Chapter 10, pp. 142-161.

Haigler et al., 1979, The Fluorescent Brightener, Calcofluor White, Alters Cellulose Cellulose Synthesis in *Acetobacter Xylinum*, *J. Cell Biol.*, 70a.

Jefferson et al., *EMBO J.*, vol.6, pp. 3901-3907, 1987.

ART-UNIT: 168

PRIMARY-EXAMINER: Fox; David T.

ASSISTANT-EXAMINER: Mehta; Ashwin D.

ATTY-AGENT-FIRM: Pennie & Edmonds LLP

ABSTRACT:

The present invention discloses genetically engineered plants which display altered structure or morphology. The transgenic plants express a cell wall modulation transgene or gene construct that results in the altered structure or morphology. The altered structure or Morphology can be associated with, for example, altered biomass, growth, yield, greater or less resistance to biodegradation, more or less digestible to ruminants, altered cellulose content, larger leaves/normal hypocotyls or smaller leaves/longer hypocotyls, etc. compared to a non-transgenic plant of the same species. The cell wall modulation transgene can be any cellulose binding domain, a cellulose binding protein, or a cell wall modifying protein or enzyme such as endoxyloglucan transferase, xyloglucan endo-transglycosylase, an expansin, cellulose synthase, or a novel isolated endo-1,4-.beta.-glucanase of *Arabidopsis thaliana*. The invention also discloses transgenic plants containing a gene construct comprising a promoter operably linked to the cell wall modulation protein or polypeptide gene and may further comprise a sequence encoding a secretion signal peptide. In particular, the invention discloses transgenic plants containing a gene construct comprising the cell promoter, operably linked to the cell signal peptide and any cellulose binding domain. Methods for modulating plant growth by transgenic expression of a cell wall modulating protein or polypeptide are also disclosed. The present invention also discloses a novel, isolated *Arabidopsis thaliana* endo-1,4-.beta.-glucanase gene (cell1), its promoter (cell1 promoter) and polypeptide (Cell1) and recombinant nucleic acid vectors containing the cell gene with or without a secretion signal peptide sequence and/or the cell1 promoter.

18 Claims, 47 Drawing figures

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-
- ☐ 2. [6080910](#). 20 Feb 97; 27 Jun 00. Transgenic knockout animals lacking IgG3. Schreiber; John R., et al. 800/18; 800/13 800/21 800/3. C12N015/00.
-
- ☐ 3. [5847112](#). 14 Nov 97; 08 Dec 98. Process for making capsular polysaccharides from *Streptococcus pneumoniae*. Kniskern; Peter J., et al. 536/127; 424/244.1 435/101 536/123 536/123.1 536/124 536/126. C07H001/08 C08B037/00 C12P019/04 A61K039/09.
-
- ☐ 4. [5623057](#). 20 May 94; 22 Apr 97. Pneumococcal polysaccharide conjugate vaccine. Marburg; Stephen, et al. 530/404; 424/193.1 424/194.1 424/197.11 424/234.1 424/237.1 424/241.1 424/244.1 424/256.1 424/260.1 530/403 530/405 530/406 530/408 530/409. C07K017/02 A61K039/385.
-
- ☐ 5. [JP405148157A](#). 28 Jan 92. 15 Jun 93. POLYSACCHARIDE ANTIGEN FROM *STREPTOCOCCUS PNEUMONIAE*. KNISKERN, PETER J, et al. A61K039/00; A61K039/09 C12P019/04.
-
- ☐ 6. [JP403000200A](#). 29 May 89. 07 Jan 91. TREATMENT OF WASTE LIQUID AFTER PRODUCTION OF SHOCHU BY DISTILLATION. KOGURE, MASASUKE, et al. 435/885 435/886. C02F003/34; C02F003/00 C12N001/20 A23K001/06 C05F005/00 C12F003/10.
-
- ☐ 7. [JP402134318A](#). 15 Nov 88. 23 May 90. INTERFERON-PRODUCTION PROMOTING AGENT AND INTERFERON-PRODUCTION PROMOTING COMPOSITION CONTAINING THE SAME. KURONO, MASATSUNE, et al. A61K031/28; A61K031/28 A61K031/28 C07F007/30.
-
- ☐ 8. [WO002079254A1](#). 29 Mar 02. 10 Oct 02. HUMAN MONOCLONAL ANTIBODIES AGAINST CAPSULAR POLYSACCHARIDES OF *STREPTOCOCCUS PNEUMONIAE*. JANOFF, EDWARD N, et al. C07K016/00; C12P021/08 A61K039/395 A61K039/40 A61K039/42 G01N033/53.
-
- ☐ 9. [EP000497524A2](#). 27 Jan 92. 05 Aug 92. Polysaccharide antigens from *streptococcus pneumoniae*. KNISKERN, PETER J, et al. A61K039/09; C08B037/00 C12P019/04.
-
- ☐ 10. [WO009117256A1](#). 05 May 91. 14 Nov 91. AUTOLYSIS-RESISTANT STRAINS AND METHODS EMPLOYING SAME. TOMASZ, ALEXANDER. 435/6 435/69.1 435/FOR.123 435/FOR.125. C07H001/06; C07H001/08 C07H005/04 C07H005/06 C12N015/00 C12P021/06.
-
- ☐ 11. [WO 200279254A](#). New human monoclonal antibodies against *Streptococcus pneumoniae* capsular polysaccharides, useful for treating or preventing *S. pneumoniae* infections, e.g. pneumonia, meningitis, bacteremia or chronic lymphocytic leukemia. FASCHING, C, et al. A61K039/395 A61K039/40 A61K039/42 C07K016/00 C12P021/08 G01N033/53.
-
- ☐ 12. [WO 200029588A](#). Lysozyme/surfactant protein-B fusion proteins for prophylaxis and

treatment of bacterial infections, respiratory infections such as cystic fibrosis and gastro intestinal infections in a mammal. AKINBI, H T, et al. A01K067/027 A01K067:027 A61K009/12 A61K038/46 A61K038/47 A61P001/00 A61P011/00 A61P031/04 C07K014/47 C07K019/00 C12N009/36 C12N009/42 C12N015/09 C12N015/12 C12N015/56 C12N015/62.

☐ 13. WO 200016803A. Obtaining cell wall C-polysaccharide antigens containing not more than 10% protein from the bacterium Streptococcus pneumoniae for the production of antigen-specific antibodies. FENT, M K, et al. A61K039/085 A61K039/385 C07K001/14 C07K001/22 C12P021/00 G01N030/88 G01N033/543 G01N033/569 C12P021/00 C12R001:44.

☐ 14. US 5993809A. Lysozyme/surfactant protein-B fusion proteins useful for treating bacterial infections of the respiratory system. AKINBI, H T, et al. A61K038/16 A61K038/43 A61K038/47.

☐ 15. US 6303114B. Inducing or enhancing an immune response to a T-cell independent antigen, useful for e.g. vaccination against Streptococcus pneumoniae or Neisseria meningitidis. BUCHANAN, R M, et al. A61K031/715 A61K038/00 A61K038/20 A61K038:20 A61K039/00 A61K039/002 A61K039/09 A61K039/095 A61K039/102 A61K039/12 A61K039/39 A61K048/00 A61P037/04 A61P043/00 A61K039/39 A61K039:09 A61K039:095 A61K039:102 A61K038:20 A61K039/39 A61K039:09 A61K039:095 A61K039:102.

"PATNO_JP408059492A" 16. JP 08059492A. Anti-diabetic agent for treating insulin-independent diabetes mellitus - contains polysaccharide glycan complex prep'd from cell of gram positive bacteria by treatment with cell wall lytic enzyme. A61K031/715 A61K035/74 C08B037/00 C12P019/04.

☐ 17. EP 497525A. Conjugate contg. immunogenic protein and pneumococcal polysaccharide - useful as vaccine against pneumococcal-induced diseases e.g. otitis media, meningitis, bacteriuria etc.. BURKE, P D, et al. A61K000/00 A61K037/02 A61K039/00 A61K039/002 A61K039/009 A61K039/02 A61K039/09 A61K039/095 A61K039/12 A61K039/295 A61K039/385 A61K039/39 A61K039/395 A61K047/048 A61K047/36 A61K047/48 C07K001/14 C07K004/00 C07K009/00 C07K014/195 C07K014/22 C07K014/315 C07K015/00 C07K015/04 C07K015/12 C07K015/14 C07K017/02 C07K017/10 C08B037/00 C12N001/00 C12P019/04.

"PATNO_JP402108970A" 18. JP 02108970A. Liposome for determination of complement - contg. labelling substance with substance to activate alternative pathway of complement in or bound to liposome membrane. G01N033/53 G01N033/54 G01N033/544.

☐ 19. US 5071977A. Novel oligosaccharide - isolated from cell walls of streptococcus sanguis H1 for inhibiting or reversing build up of human dental plaque. CASSELS, F J, et al. A61K000/01 A61K006/00 A61K031/70 C07H003/00 C12P019/04.

"PATNO_JP357042634A" 20. JP 57042634A. Determining haemolytic Streptococcus Gp. polysaccharide antigen - using latexes comprising latex particles sensitised with anti-haemolytic antibody, esp. for early diagnosis of infections. A61K039/42 G01N033/54.

"PATNO_JP356145218A" 21. JP 56145218A. Antitumour drug - comprises polysaccharide component isolated from cell walls of lactic acid Streptococcus spp.. A61K035/74.

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